$$C_R = \frac{\sum_{x=1}^{m}\left(Q_x \times \bar{C}_x\right) + \sum_{y=1}^{n}\left(Q_y \times 500\ \text{ppmw}\right)}{\sum_{x=1}^{m} Q_x + \sum_{y=1}^{n} Q_y}$$

where:

C_R=VOHAP concentration limit, ppmw.

x=Individual off-site material stream ''x'' that has a VOHAP concentration less than 500 ppmw at the point-of-delivery.

y=Individual off-site material stream ''y'' that has a VOHAP concentration equal to or greater than 500 ppmw at the point-of-delivery.

m=Total number of ''x'' off-site material streams treated by process.

n=Total number of ''y'' off-site material streams treated by process.

Q_x=Total mass quantity of off-site material stream ''x'', kg/yr.

Q_y=Total mass quantity of off-site material stream ''y'', kg/yr.

$\bar{C}_x$=VOHAP concentration of off-site material stream ''x'' at the point-of-delivery, ppmw.

(e) *Determination of required HAP mass removal rate (RMR).* (1) All of the off-site material streams entering the treatment process shall be identified.

(2) The average VOHAP concentration of each off-site material stream at the point-of-delivery shall be determined in accordance with the requirements of paragraph (b) of this section.

(3) For each individual off-site material stream that has an average VOHAP concentration equal to or greater than 500 ppmw at the point-of-delivery, the average volumetric flow rate and the density of the off-site material stream at the point-of-delivery shall be determined.

(4) The required HAP mass removal rate (RMR) shall be calculated by using the average VOHAP concentration, average volumetric flow rate, and density determined for each off-site material stream and the following equation:

$$\text{RMR} = \sum_{y=1}^{n}\left[V_y \times k_y \times \frac{\left(\bar{C}_y - 500\ \text{ppmw}\right)}{10^6}\right]$$

where:

RMR=Required HAP mass removal rate, kg/hr.

y=Individual off-site material stream ''y'' that has a VOHAP concentration equal to or greater than 500 ppmw at the point-of-delivery as determined in accordance with the requirements of §63.693(b).

n=Total number of ''y'' off-site material streams treated by process.

V_y=Average volumetric flow rate of off-site material stream ''y'' at the point-of-delivery, m^3/hr.

k_y=Density of off-site material stream ''y'', kg/m^3

$\bar{C}_y$=Average VOHAP concentration of off-site material stream ''y'' at the point-of-delivery as determined in accordance with the requirements of §63.693(b), ppmw.

(f) *Determination of actual HAP mass removal rate (MR).* (1) The actual HAP mass removal rate (MR) shall be determined based on results for a minimum of three consecutive runs. The sampling time for each run shall be 1 hour.

(2) The off-site material HAP mass flow entering the process (E_b) and the off-site material HAP mass flow exiting the process (E_a) shall be determined in accordance with the requirements of paragraph (g)(4) of this section.

(3) The actual mass removal rate shall be calculated by using the mass flow rates determined in accordance with the requirements of paragraph (f)(2) of this section and the following equation:

$$MR = E_b - E_a$$

where:

MR=Actual HAP mass removal rate, kg/hr.

E_b=Off-site material HAP mass flow entering process as determined in accordance with the requirements of paragraph (f)(2) of this section, kg/hr.